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09/892,502	06/28/2001	Tatsunori Saito	04329.2590	3227

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EXAMINER	
MERED, HABTE	

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/892,502	SAITO, TATSUNORI	
	Examiner	Art Unit	
	Habte Mered	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-19 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,4-6,9-11,14-16 and 18 is/are rejected.

7)☒ Claim(s) 2,3,7,8,12,13,17 and 19 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on 25 April 2005 has been entered and fully considered.

2. Claims 1-19 are pending.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1, 4, 6, 9, 11, 14, 15, 16 and18** are rejected under 35 U.S.C. 102(e) as being anticipated by Kesselring (U.S. 6, 081, 299).

5. Regarding **currently amended claim 1**, Kesselering discloses a multiplexer for packetizing a plurality of encoded data streams, the multiplexer comprising: means for inserting a time stamp to be used for the reproduction of the encoded data streams into *a first packet*; means for multiplexing *a second packet packetized from the first packet*; means for detecting the number of skipped frames from the encoded data stream; and means for generating a time stamp to be inserted into the *first packet* of the encoded data stream on the basis of the detected number of skipped frames. **(Kesselring shows in Figure 4 that the outputs of the Analog to Digital converters 405 and 410 as the first series of packets to be used as the input to the encoders 415 and 420.**

Further in Figure 4 Kesselring shows a multiplexer that takes as an input a plurality of encoded data streams (i.e. real time video and audio) constituting a series of *second packet*. The transport streams (TS) multiplexer 435 takes as an input the encoded video stream from the video encoder 415 and the encoded audio stream from the audio encoder 420. See Column 6, Lines 18-24. The PTS Adjuster 430 generates the presentation time stamp. Further, Kesselring discloses that a local time stamp is used to insert time stamp in the encoders that take the first packets as an input. See Column 1, Lines 60-67 and Column 2, Lines 1-6The difference between the output of the theoretical frame counter and the system clock is in effect a count of the number of skipped frames from the elementary streams and is calculated in the PTS Adjuster 430. See Column 6, Lines 24-35. TS Multiplexer 435 based on the adjusted time stamp supplied by the PTS Adjuster 430 inserts the time stamp into the packets of the encoded data. See Column 6, Lines 57-67. The presentation time stamp is adjusted on the basis of the number of skipped frames for systems with slow video frame rates as shown in Figures 3 and 6. See Column 6, Lines 24-35 and Lines 42-56.)

6. Regarding **original claims 4, 9 and 14,** Kesselring discloses the multiplexer, wherein the means for detecting further includes means for determining whether or not the encoded data stream includes frame skips; and the number of skipped frame are detected only in the case where the means for determining determines that the data streams include frame skips. **(Kesselring discloses a means for determining whether or not the encoded data stream includes skipped frame by the fact that**

when ever there is a difference between the theoretical presentation time stamp and the oscillator clock, that indicates how much time has elapsed since the start of the multimedia system, implies presence of skipped frame for slower systems. See Column 6, Lines 40-55. If the difference is zero then no adjustment will be needed and there will not be any need to detect skipped frames so long as the difference remains zero.)

7. Regarding **amended claim 6 and new claims 16 and 18**, Kesselring discloses a multimedia communication apparatus comprising: means for individually encoding a plurality of media streams having time correlation to output encoded media streams respectively; means for packetizing respectively the encoded media streams; means for detecting the number of skipped frames from the encoded media streams; means for generating a time stamp on the basis of the number of detected skipped frames; means for inserting the time stamp into a packet header of the encoded media streams; means for multiplexing packets of the encoded media streams so as to output transmission streams; and means for transmitting the transmission streams to a transmission channel. **(Kesselring discloses a multimedia communication apparatus as shown in Figures 1A and 4. The system has a means of individually encoding a real time video and audio to output encoded media streams respectively as shown in Figure 1 A. The video stream is time correlated with the audio stream. See Column 2, Lines 7-15. The video and audio encoders convert the digitized video and audio streams to an encoded video and audio stream (i.e. the streams are packetized). The difference between the output of the theoretical frame counter**

and the system clock is in effect a count of the number of skipped frames from the elementary streams and is calculated in the PTS Adjuster 430 of Figure 4. The PTS Adjuster 430 generates the presentation time stamp. See Column 6, Lines 24-35. The transport streams (TS) multiplexer 435 in Figure 4 takes as an input the encoded video stream from the video encoder 415 and the encoded audio stream from the audio encoder 420. See Column 6, Lines 18-24. TS Multiplexer 435 based on the adjusted time stamp supplied by the PTS Adjuster 430 inserts the time stamp into the packets of the encoded data. See Column 6, Lines 57-67. The presentation time stamp is adjusted on the basis of the number of skipped frames for systems with slow video frame rates as shown in Figures 3 and 6. See Column 6, Lines 24-35 and Lines 42-56. Kesselring discloses in Figure 1A that the multimedia (i.e. video and audio encoded) streams are multiplexed to produce a transmission stream (i.e. a multimedia data stream) and then transmitted via a transmission channel (i.e. connection 120 in Figure 1A). See Column 1, Lines 53-58)

8. Regarding **claims 11 and 15**, Kesselring discloses a method for generating a time stamp which is applied to a multiplexer, the method comprising the steps of: packetizing video stream encoded with an encode scheme regulated with MPEG-4 and encoded media stream having time correlation with the video stream, inserting a time stamp required for the reproduction of the encoded video stream into the packets; multiplexing the packets; detecting the number of skipped frames from the encoded video stream; and providing a time stamp for inserting packets of the video stream on

the basis of the number of skipped frames which have been detected. **(Kesselring discloses a method of generating a time stamp for a multiplexer that feeds off a video encoder that converts digitized video bit stream to an encoded video data stream (i.e. packetizing video stream) in compliance with the MPEG system. The multiplexer and the encoders are shown in Figure 4. The MPEG system can be MPEG1 or MPEG2 or MPEG4 or any other encoding technique regulated by future MPEG releases. See Column 6, Lines 20-25 and Column 9, Lines 38-42. The audio encoder connected to the multiplexer also converts digitized audio bit stream to an encoded audio data stream. The encoded audio stream has a time correlation with the video stream. See Column 6, Lines 18-24 and Column 2, Lines 10-15. The PTS Adjuster 430 generates the presentation time stamp. The difference between the output of the theoretical frame counter and the system clock is in effect a count of the number of skipped frames from the elementary streams and is calculated in the PTS Adjuster 430. See Column 6, Lines 24-35. TS Multiplexer 435 based on the adjusted time stamp supplied by the PTS Adjuster 430 inserts the time stamp into the packets of the encoded data. See Column 6, Lines 57-67. The presentation time stamp is adjusted on the basis of the number of skipped frames for systems with slow video frame rates as shown in Figures 3 and 6. See Column 6, Lines 24-35 and Lines 42-56.)**

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claims 5 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka (U.S. 6,282,209) in view of Kesselring (U.S. 6, 081, 299).

11. Regarding **claim 5**, Kataoka discloses a multiplexer for packetizing an encoded video and audio streams into Packet Elementary Streams (PES). Katoka's system is shown in Figure 1. The video and audio PES's that constitute a program (i.e. time correlated) are multiplexed into transport system and eventually transmitted. The system has a means to generate and insert time stamp in these packets. **See Column 1, Lines 18-30 and 49-55 and Column 2, Lines 33-40**. Katakoa discloses that the system in Figure 1 and his invention fully support MPEG-4 encoding scheme. **See Column 12, Lines 43-44.**

Kataoka fails to disclose a means to detect the number of skipped frames from the encoded video stream and use the output of the detection to correct the time stamp that is to be inserted in the packets of the video stream.

Kesserling teaches a means for determining whether or not the encoded data stream includes skipped frame by the fact that when ever there is a difference between

the theoretical presentation time stamp and the oscillator clock indicates presence of skipped frame for slower systems. The difference between the output of the theoretical frame counter and the system clock is in effect a count of the number of skipped frames from the elementary streams and is calculated in the PTS Adjuster 430 of Figure 4. **See Column 6, Lines 40-55.** The PTS adjuster generates time stamp, which is to be inserted into the packet of the video stream on the basis of the detected number of skipped frames. **See Figure 4 and Column 6, Lines 46-55.**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kataoka's system in such a way as to detect skipped frames and correct the time stamps of the video frames received by the encoder, the motivation being able to reduce visual artifacts in the decoded video when video and audio data are supplied in real time.

12. Regarding **claim 10**, Kataoka shows a multimedia communication apparatus system in Figure 1. The system disclosed by Kataoka is capable of supporting MPEG-4 encoding scheme. See Column 12, Lines 43-44. In Figure 1, the MPEG encoder unit 201 encodes video streams and other media (e.g. audio) streams. Katakoa discloses that the encoded video and media (i.e. audio) stream are packetized to create video and media Packet Elementary Streams (PES). The video and audio PES's that constitute a program (i.e. time correlated) are multiplexed into transport system and eventually transmitted. The system has a means to generate and insert time stamp in these video and audio packets. **See Column 1, Lines 18-30 and 49-55 and Column 2, Lines 33-40.**

Kataoka fails to disclose a means to detect the number of skipped frames from the encoded video stream and use the output of the detection to correct the time stamp that is to be inserted in the packets of the video stream.

Kesserling teaches a means for determining whether or not the encoded data stream includes skipped frame by the fact that when ever there is a difference between the theoretical presentation time stamp and the oscillator clock indicates presence of skipped frame for slower systems. The difference between the output of the theoretical frame counter and the system clock is in effect a count of the number of skipped frames from the elementary streams and is calculated in the PTS Adjuster 430 of Figure 4. See Column 6, Lines 40-55. The PTS adjuster generates time stamp, which is to be inserted into the packet of the video stream on the basis of the detected number of skipped frames. **See Figure 4 and Column 6, Lines 46-55.**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kataoka's system in such a way as to detect skipped frames and correct the time stamps of the video frames received by the encoder, the motivation being able to reduce visual artifacts in the decoded video when video and audio data are supplied in real time.

Allowable Subject Matter

13. **Claims 2, 3, 7, 8, 12, 13, 17 and 19** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement for reasons for allowance:

Claims 2, 3, 7, 8, 12, 13, 17 and 19 are allowable over the prior art of record since the cited references taken individually or in combination fail to particularly disclose that the number of skipped frames is detected on the basis of the time difference between a current frame of the encoded data stream and a previous frame prior to the current frame. It is noted that the closest prior art, Kesselring (U.S. 6, 081, 299) shows a means to detect the existence of skipped frames when there is a difference between the theoretical presentation time stamp value and the system clock. The actual value difference between the theoretical presentation time stamp value and the system clock is the number of skipped frames. However, Kesselring fails to disclose or render obvious the above underlined limitations as claimed.

Response to Arguments

14. Applicant's arguments filed on 25 April 2005 have been fully considered but they are not persuasive.

15. Applicant, in the Remarks on page 12, argues that Kesselring fails to disclose a means for generating a time stamp to be inserted into the first packet on the basis of the detected number of skipped frames. Further Applicant argues that adjustment of the PTS is not based on the detected count of skipped frames.

Examiner respectfully disagrees with the Applicant's conclusion. Kesselring actually discusses inserting a time stamp while the data (both audio and video) is being encoded. See Column 2, Lines 1-6. For Kesselring, this stage can be considered where the first series of packets are generated along with skipped frames. For Kesselring, at the output of the encoder the second series of packets are generated.

Here Kesselring evaluates the skipped frames based on the difference between the expected theoretical PTS and the oscillator clock. This is further illustrated in Figure 5 and 6. See also Column 6, Lines 17-35. The Applicant suggests that Kesselring detects only how fast or slow the frames are delivered. However, the Applicant on Page 4 , lines 5-15 define the condition for the occurrence of skipped frame due to the varying speed of encoding which boils down to how fast the frames are delivered. Kesselring determines the actual time to produce the encoded frame and deducts it from the expected theoretical time to determine the number of frames skipped. The adjusted PTS, which is based on the detected number of skipped frames on its own right, is a time stamp.

16. Applicant, in Remarks on Page 13, argues that neither Kataoka nor Kesserling taken alone or in any combination fail to teach a "means for generating a time stamp to be inserted into the first packet on the basis of the detected number of skipped frames".

Examiner respectfully disagrees with the Applicant's conclusion. Kesserling as presented in the response of item 15 clearly teaches inserting a time stamp (i.e. adjusted PTS) into the final packet heading into the multiplexer and is based on the detected number of skipped frames.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HM
07-11-2005

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